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ABSTRACTS BOOK

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N5201: Nanoparticles of Silver as Modulators of Immunity

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The objective of this experiment was to evaluate potential synergy effects between nanoparticles of silver (nano-Ag) and Gumboro vaccine on inflammatory factors at molecular and whole body level. Chicken embryos *in ovo* (n=120) were dived into four groups: I- control; II- hydrocolloid nano-Ag; III- Gumboro vaccination; IV – hydrocolloid nano-Ag + Gumboro vaccination. Nano-Ag from Nano-Tech, Polska, produced by electric non-explosive method (Polish patent 3800649), was injected to egg albumen; 300 µl, concentration 50 ppm. After 20 days of incubation, we evaluated morphology of bursa Fabricius, serum levels of immunoglobulin IgG and antibodies against Gumboro disease, and expression of HSP70 and NF-κB

proteins in the bursa by Western blot and immunofluorescence. Nano-Ag had no effect on morphological parameters of bursa Fabricius; the place where lymphocytes B could develop, indicating suppressing effect of nano-Ag. Ag nanoparticles enhanced vaccine action, by increasing level of immunoglobulin IgG in embryos' serum and amplified HSP70 expression – a factor diminishing inflammatory state. However, nanoparticles had no effect on NF-κB expression, being a key inflammatory factor. This preliminary investigation indicates that hydrocolloids of Ag nanoparticles can modulate immunological responses. It is also possible that nano-Ag, by enhancing effect of vaccination, can play a role as vaccine activators.